

REMARKS

We have amended claims 3 and 33 to correct minor grammatical errors.

The examiner has rejected claims 1, 5-10, 25-31, and 33-37 under 35 U.S.C. § 103(a) as obvious over U.S. pat. no. 3,914,859 to Pierson ("Pierson") in view of U.S. pat. no. 1,538,196 to Livingston ("Livingston").

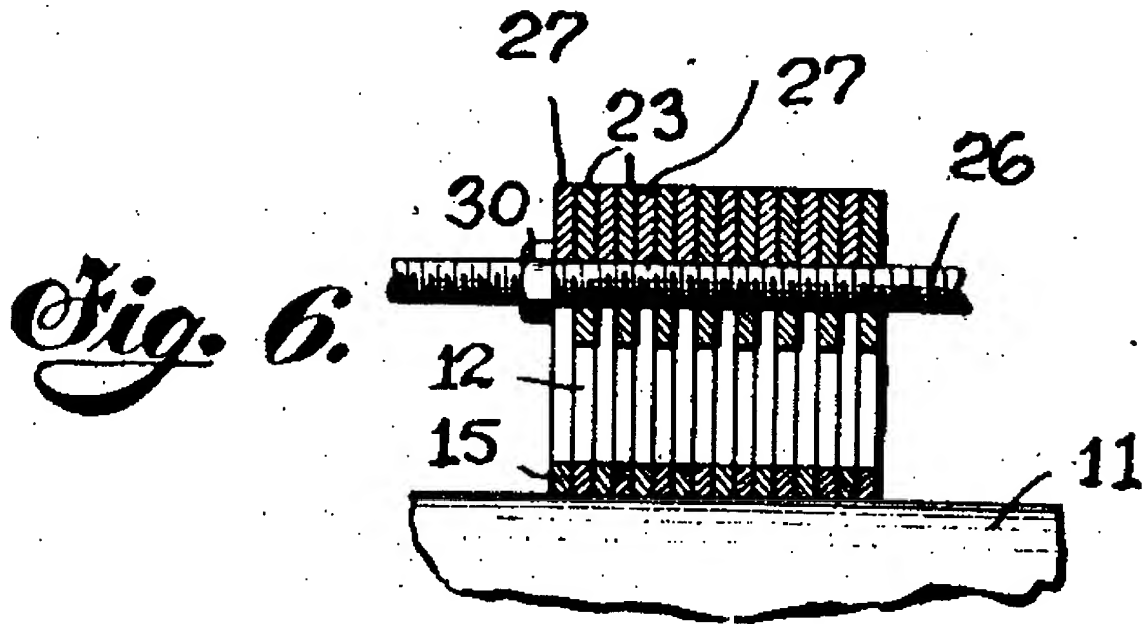
We submit, however, that neither Livingston nor Pierson describes or suggests *cross support members* with *spaces between adjacent cross support members defining a plurality of channels* as required by claim 1 and its dependent claims. Nor does Livingston or Pierson describe or suggest *cross support members* which are *spaced to provide at least one channel* with *magnetic material disposed within at least one channel* as required by claim 33 and its dependent claims.

The Examiner acknowledges in the Office Action mailed April 8, 2003 (the "Office Action") that Pierson does not disclose a plurality of cross support members. (Office Action, p. 2) The examiner, however, argues that Livingston has cross support members (10) with spaces between adjacent cross support members defining at least one channel (13). Office Action, p. 2-3.

Livingston, however, does not describe or suggest *cross support members* which are arranged such that there are *spaces between adjacent cross support members defining a plurality of channels* as required in independent claim 1.

Livingston's "coil supporting part" (10) is built of a series of alternating inner "stampings" (12, 15), shown in Figures 2 and 3, that are mated with a series of corresponding outer "stampings" (23, 27), shown in Figures 4 and 5. (*see*, Livingston at 1: 85-87; 2: 26-33; 2: 38-42)

Even if one were to characterize Livingston's stampings (12, 15, 23, 27) as cross support members, the stampings are not spaced apart to form a plurality of channels between adjacent cross support members. Rather, as clearly illustrated in Livingston's Fig. 6, reproduced below, inner stampings 12 and 15 and outer stampings 23 and 27 are completely flush with one another and there are no channels located between adjacent stampings:



Nor is there any suggestion in Livingston to modify his coil supporting part (10) by spacing the stampings 12, 15, 23, 27. In fact, Livingston teaches away from spacing the stampings. Specifically, Livingston emphasizes that a stator design must provide for the “full protection” of the coils: “It is also to be noted that in apparatus of this nature, compactness of disposition of the parts such as the conductors of the coils, and full protection thereto, are of marked importance.” (Livingston 1:65-69) Livingston also highlights the “rigidity” of his solid-form design:

“Through these various bolt holes ... are passed the bolts 26 each provided with a pair of nuts 30 by which the entire mass of stampings may be clamped into rigid form with coils securely mounted therein. With the device thus formed, the parts are so rigidly held that if desired its outer surface may be turned up in a lathe or its inner surface reamed out.” (Livingston 2: 53-61)

Because any gaps between the stampings would expose the coils in Livingstone’s design and thus fail to provide for the “full protection” of the coils and would also detract from the rigidity of the coil support assembly (10), Livingston plainly teaches away from spacing the stampings.

The examiner also argues that Livingston teaches "at least one channel (13)." (Office Action, p. 2-3). While Livingston discloses a number of recesses formed by the inner stampings, these recesses cannot be equated to the channels formed by adjacent cross support member of claim 1 because Livingston's recesses (13) are located parallel to the longitudinal axis of the stator, whereas the channels formed between adjacent cross support members in claim 1 are located perpendicular to the longitudinal axis. Livingston again teaches away from modifying his design to provide for channels that are perpendicular to the longitudinal axis by stressing the advantages of providing recesses which lie parallel to the longitudinal axis:

As shown in [Figure 7], a complete coil 20 fills two of the upper recesses, and so on around the device. Furthermore, if so desired, the individual coils are not only wound and taped in complete form but are connected end to end as indicated at 22 in Figure 7, so that the necessity for supporting connections is reduced to a minimum. During the step of inserting the coils there is no necessity for distorting them or deranging the component conductors for they are simply *freely inserted in the various slots and recesses and may thus be placed in position without injury and with a minimum amount of time*. Also when they are mounted as shown, *the conductors lie precisely parallel, thus giving a compact arrangement with a maximum number of ampere turns for the space provided* and they are amply protected against short circuiting either during construction or during use. (Livingston 2: 4-25 (emphasis added))

Livingston teaches away from modifying his design to allow for perpendicular channels since such channels would not allow for easy insertion of coils into the coils supporting structure (10) nor provide a structure that ensures that the coils are precisely parallel. Accordingly, a person of ordinary skill in the art would not be motivated to modify Livingston in this way.

Neither Pierson nor Livingston have *cross support members spaced to provide at least one channel between motor stator assembly and outer housing* as required in claim 33, because, as explained above, neither Pierson nor Livingston describe or suggest spaced cross support members. They also clearly do not describe or suggest *at least one channel between the motor stator assembly and outer housing* as required by claim 33. Therefore, applicant respectfully submits that independent claim 33, along with their dependent claims should be allowed.

Moreover, dependent claims include additional features that further distinguish them from Livingston.

For example, Livingston does not describe or suggest that an additional support structure or housing could be used to engage the cross support members as required in claim 3. This suggests that Livingston's "coil supporting part" (10) does not function as a series of cross support members at all, but as solid outer casing, consistent with the arguments above.

Also, Livingston does not suggest disposing a magnetic material inside at least one channel between the cross support members perpendicular to the longitudinal axis, as required in claim 25. Livingston's recesses (13, 16) are not perpendicular to the longitudinal axis and cannot contain additional material, as they must hold the main stator coils.

The examiner has rejected claims 3, 4, and 32 under 35 U.S.C. § 103(a) as obvious over U.S. pat. no. 3,914,859 to Pierson ("Pierson") in view of U.S. pat. no. 1,538,196 to Livingston ("Livingston") as applied to claims 1, 5-10, 25-31, and 33-37 and further in view of U.S. pat. no. 4,134,036 to Curtiss ("Curtiss"). The applicant disagrees for the reasons set out above and for the following reasons.

The examiner argues that it would be obvious to modify the stator assembly of Pierson and Livingston with the mounting device of Curtiss. Office Action p. 3-4. In Figure 1, Curtiss discloses a mounting device with an outer housing (14) with grooves (16) on the inside and a circular cross support (11) with edges (12) to engage the inner surface of the outer housing (14). Like Pierson and Livingston, Curtiss does not disclose or suggest that cross support (11) in Figure 1 or cross support (20) in Figure 4 could have *spaces between adjacent cross support members* as required by claim 1. Thus, even if a person skilled in the art had been motivated to combine the teachings of Pierson with the teachings of Livingston and Curtiss (which he/she would not have), that person would have not arrived at the invention as recited in claim 1.

For all of these reasons, Applicant respectfully submits that each of the pending claims should be allowed.